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Double Fines in Work Zones

Get the Picture. Listen to the signs. It's a new campaign from the Federal Highway Administration and the Alaska Department of Transportation to increase work zone safety and make motorists aware of new double fines legislation. Beginning July 1, 1999, "Jack Hammer," an animated character that tells people what signs would say if they could speak, stars in the television and radio ads.



The campaign encourages motorists to "Listen to the Signs" in work zones and to begin reacting to the information provided as soon as they see them. About 25,000 serious injuries occur nationally in work zones yearly. Reacting to the signs will help reduce the number of accidents.

But signs alone can't prevent disaster. That's why fines will now be double for all traffic violations occurring in Alaska's work zones. .

WASHTO 99 Conference

Alaska DOT&PF hosted the WASHTO 99 Conference held July 19 - July 22, 1999, in Juneau, Alaska. WASHTO (Western Association of State Highway Transportation Officials) holds an annual conference to give participating agencies the opportunity to share knowledge and information with agencies throughout the region. The theme of this year's conference was "M2000- The Multi-Modal Challenge", a look at preparing for transportation in the 21st century, particularly regarding TEA-21 issues.



Alaska Governor Tony Knowles addresses the participants.

The opening session began with a welcome from Alaska Department of Transportation & Public Facilities (DOT&PF)

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How Well Do You Know Road Safety

by Chris Janssen, *Alaska DOT&PF, Research & Technology Transfer*

Safety on the roads is important to remember all the time, but summer in Alaska is a great time for review. With the long days, increased traffic, tourists, and the inevitable construction, T2 thought this would be a good time to review a few basics.

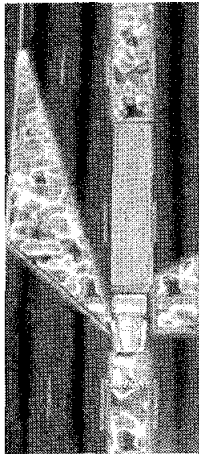
See if you know the answers to the following questions from the Federal Highway Administration Web site (<http://www.ohs.fhwa.dot.gov/tidbits/hkquiz.html>) about **highways**.

V In a 'weaving section' when traffic is entering and exiting at a freeway interchange, who has the right-of-way?

Both through-traffic and exiting traffic have right-of-way over vehicles entering the freeway. However, through-traffic should be aware of on ramps and move to adjacent lanes to allow for oncoming traffic to merge safely.

V How do you know when a truck driver can see you?

You can see his/her face in the truck's mirrors. If you cannot see his/her face, you're in a blind spot - think of these areas as "no zones" and don't linger beside a truck or bus when you are passing



V What does a diamond-shaped sign mean?

A diamond-shaped sign means warning!

0 What is the only highway warning sign that is round?

The railroad advance warning sign is the only highway warning sign that is round.

0 What does a 'chevron' highway sign indicate?

Chevron signs are fairly new additions to the American road and warn of a sharp curve in the road. Chevrons mean that you should adopt a safe speed to take a sharp curve in the direction in which they are pointing - watch for advisory signs with suggested safe speed limits.

V Are you ever allowed to cross a double solid yellow line?

The only time you are permitted to cross a double solid yellow line is when making a left turn into a driveway or business entrance.

◇ What indicates a left exit on freeway exit signs?

The position of the exit number panel above the freeway guide sign. If the exit number panel is on the left, then the exit will also be on the left.

0 What direction are you traveling if you're on an interstate numbered I-65?

If you are on an Interstate highway with the number I-65, you are traveling either north or south. One- or two-digit odd-numbered Interstates are always north-south routes. One- or two-digit even-numbered Interstates are always east-west routes.

0 What direction are you traveling if you're on an interstate numbered I-494?

You may be traveling in a circle - if the first of the three digits is an even number, the highway usually connects to another Interstate at both ends - often in a circular "beltway" or loop. If the first of the three digits is an odd number, the highway is usually a "spur" route that connects with an Interstate at only one end, sometimes going into a city center.

V What do the green 'mile markers signs' along the sides of interstate highways tell you?

These mile markers show the number of miles from where the route entered the state in which you are traveling. Mile markers always increase as you travel east or north - and decrease as you travel west or south.

0 In a work zone, does a flagger have the same authority as a regulatory sign?

Yes - you can be cited for disobeying his/her directions. In some states, fines are doubled for traffic violations in work zones.

0 What are rumble strips?

These roadway markings make you feel and hear the traffic message. Rumble strips are small indentations or narrow raised strips on the highway or shoulder. They vibrate the steering wheel and make a noise inside the vehicle to get the attention of the driver -to alert the driver to a decision point ahead; to wake the driver who may have dozed off; to caution the driver about the danger of passing; to alert the driver to some new or unexpected situation ahead.

Drowsy Driving

Now that you have answered some basic questions, let's find out how much you know about hazardous drivers. What effects does **drowsiness** have on a driver? The same effects as drinking! Drowsiness slows reaction

time, impairs judgement, and dulls awareness. Answer the following questions from AAA Foundation for Traffic Safety, as published on the *Ask Mr. Traffic* Web site (<http://www.mrtraffic.com/sleep.htm>) to see how much you know about this danger.

TRUE OR FALSE?

1. Coffee overcomes the effects of drowsiness while driving.
2. I can tell when I'm going to fall asleep.
3. I'm a safe driver so it doesn't matter if I'm sleepy.
4. I can't take naps.
5. I get plenty of sleep.
6. Being sleepy makes you misperceive things.
7. Young people need less sleep.
8. Sleep? You can sleep when you're dead.

Coffee Overcomes the Effects of Drowsiness While Driving: FALSE

Caffeine is not a substitute for sleep. It works only in the short run and wears off FAST. You are still subject to sleep deprived "micro-naps" that can last 4-5 seconds. At 55 MPH, that is more than 100 yards!! !

I Can Tell When I'm Going To Sleep: FALSE

Most people think this is true. It simply is not. If you're drowsy, you know generally when you might fall asleep, but the moment is something completely out of your control. You also do not know how long you have been asleep, and even a few seconds can end up with fatal results for you or someone else.

I'm a Safe Driver So It Doesn't Matter If I'm Sleepy: FALSE

The ONLY safe driver is the alert driver. A driving instructor becomes a menace if they are sleepy behind the wheel. The young man who was awarded "America's Safest Teen Driver" in 1990 later fell asleep behind the wheel and was killed.

I Can't Take Naps: FALSE

Many people say this. If you think you can't nap, stop the car and recline for 15 minutes anyway. Find a quiet place that is safe...the corner of a mall or a gas station. Lock your doors, and roll up your windows. I even carry a sleep mask in the car. People look at me funny, but hey.. .Like I REALLY care what THEY think!

I Get Plenty of Sleep: FALSE

Ask yourself this.. .do you wake up RESTED? I know precious few people who can answer that "YES". The average person needs 7-8 hours of sleep a night. If you

don't get it, you are building up a "sleep debt" which is cumulative.

Being Sleepy Makes You Misperceive Things: TRUE

Have you ever driven at night and thought you'd seen an animal but it turned out to be something else (like your wife or husband)? A drowsy driver does not process information as fast or accurately as an alert driver and is unable to react quickly enough to avoid a collision. By the way.. .if you DO see a real animal, hitting one of THEM is like hitting a brick wall.. .which can be fatal to both of you.

Young People Need Less Sleep: FALSE

In fact, teens and young adults need MORE sleep than people in their 30's. This is due to increased activity and output which need more regeneration time.

Here are some warning signals:

Your eyes close or go out of focus by themselves

You have trouble keeping your head up

You can't stop yawning

You have wandering thoughts

You don't remember driving the past few miles

You drift between lanes, tailgate, or miss signs

You have drifted off the road and narrowly missed crashing

If you have any one of these symptoms...PULL OFF THE ROAD and take a nap. Please be aware though, that many states do NOT allow you to use the shoulder of a freeway or highway this way.

Older Drivers

Everybody gets older, but with age a few things change. Changes in the body effect **older drivers'** ability to drive; vision, hearing, reaction time, and strength lessen with age. Height lessens with age. This may hinder the view over the steering wheel or in the mirrors. Medication can restrict driving ability as well. As a result of these changes, as well as too much reliance on a good driving record, drivers 55 and over are involved in more accidents per mile driven than those 30-54.

The eyes begin to require more light as you age. This can affect vision at night, dusk, or on cloudy days.

Adjusting to darkness, like going into a tunnel or adjusting to darkness after passing oncoming traffic with headlights, slows as we age. If you have to drive at night, stick to roads you know, or drive them during the day to become comfortable with the road and identify any possible obstructions. Reading signs at a distance may become difficult, and even staying in the lane may

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Breaking Away to Save Lives

This project was established to field test and evaluate the effectiveness of Breakaway Timber Utility Poles, which were designed and developed in the late 1980s under an FHWA-sponsored research project.

Each year, about 1,400 people are killed and 65,000 are injured nationwide because of collisions with some of the 88 million utility poles located within road and street rights-of-way. In addition to the human suffering involved, these collisions represent a substantial cost to the utility industry in damaged facilities and disrupted service.

Several countermeasures can reduce the hazards of vehicles hitting utility poles. For example: (1) a utility line can be placed underground; (2) a pole might be relocated farther from the edge of the roadway or in an inaccessible area; (3) the number of poles could be reduced through joint use or by increasing span lengths between poles; (4) poles might be located on only one side of the road; (5) a pole can be shielded from impact by placing it behind an existing guardrail or by placing a crash cushion in front of it; or (6) a pole could be designed to "breakaway" upon impact.

Background

The Federal Highway Administration (FHWA) sponsored research in the early 1980s to develop an economical "yielding" timber utility pole that would increase the safety of passengers in impacting vehicles and satisfy design criteria of the utility industry. The resulting design, called the Hawkins Breakaway System (HBS), was successfully crash tested at the Texas Transportation Institute (TTI) and, by 1986, was deemed ready for selective implementation.

Timber utility poles that the HBS and subsequent yielding designs have been applied have typically been called "breakaway timber utility poles." This term is misleading because all timber poles break if struck by combinations of vehicle weight and speed. Hence, it is more appropriate to call these poles "steel reinforced safety poles," or SRSPs.



The FHWA provided technology applications funds in 1989 for "experimental" installations of the HBS in Kentucky and Massachusetts,

☛ The Kentucky Utilities Company retrofitted 10 existing utility poles in Lexington with the breakaway device.

☛ The Massachusetts Electric Corporation and the New England Telephone Company installed 19 new utility poles near Boston. These poles were prefabricated and contained the SRSP device when delivered to the site. The HBS design was substantially modified for these installations. This modified design is called the FHWA design or the Massachusetts design.

The steel reinforced safety poles in Kentucky and Massachusetts were evaluated for two years with the following results:

☛ No pole failures occurred when SRSPs were exposed to the natural forces of wind, ice, and snow. An incident in Massachusetts displayed the ability of the poles to resist wind loadings that toppled conventional poles. It has been estimated that new SRSPs will withstand wind loads up to 150 mph, compared to 100 mph for new Class 4 wood poles.

a Errant vehicles in Massachusetts hit SRSPs five times with no serious injuries or interruption of utility service. In all these accidents, utility personnel found the poles to be quicker and easier to repair than standard poles, primarily because the need to transfer service lines was eliminated.

On January 27, 1993, the FHWA upgraded the HBS and FHWA (Massachusetts) designs from "experimental" to "operational." This meant the FHWA was satisfied the yielding device had performed satisfactorily in full-scale crash tests and had demonstrated satisfactory in-service performance, and deemed it appropriate for the SRSP device to be used routinely on Federal-aid highway projects.

On June 17, 1993, the FHWA approved another SRSP design for use on Federal-aid highway projects, called the AD-IV. It is similar to the HBS and FHWA designs in concept, but some of the hardware configurations are different.

FHWA provided technology applications funds in 1995 for installations of the AD-IV in Texas and the FHWA design in Virginia.

☛ The Texas Utilities Electric Company retrofitted 5 existing utility poles in Arlington with the AD-IV breakaway device. The SRSPs in Texas will be evaluated for two years. One accident was reported. Even though the pole had been improperly installed, the pole functioned properly during the collision and there were no serious injuries or interruption of utility service.

☛ The Delmarva Power Company retrofitted 5 existing utility poles on Virginia's Eastern Shore with the FHWA device. The SRSPs in Virginia were evaluated for two years. There were no accidents and the poles withstood strong winds on several occasions.

The HBS, FHWA, and AD-IV designs have all been found crashworthy in accordance with criteria set forth in NCHRP Report 230, and with more current criteria set forth in NCHRP Report 350.

Approval of the use of the HBS, FHWA, and AD-IV designs for routine use on Federal-aid highway projects does not mean that steel reinforced safety poles are mandated by the FHWA. Rather, they are considered to be an additional countermeasure available to a State as it considers what actions to take in addressing utility pole safety.

Design Recommendations

The HBS design is set forth in Research Report FHWA/RD-86/154, *Safer Timber Utility Poles: Volume I - Summary Report*, September 1986. The FHWA and AD-IV designs are attached to FHWA approval letters. Detailed drawings may be obtained from the FHWA.

There are three basic components shared by the HBS, FHWA, and AD-IV designs. They are—

- ☛ a shear plane created 102 mm (4-in) or less above the ground by two slip base units bolted together,
- ☛ an upper hinge to allow rotation of the pole, and
- ☛ overhead guy cables or suspension strands supporting telephone lines to support the pole upon being sheared.

The FHWA design differs from the HBS design in the following ways:

- ☛ The length of the slipbase lower sleeve is 30 inches. It was increased from 17 inches to account for

the pole rot problem (timber utility poles are periodically examined for pole rot which reportedly can occur from ground level to a depth of 30 inches).

☛ The length of the slipbase upper sleeve is also 30 inches. It was increased from 17 inches to make it possible to standardize manufacturing, provide interchangeable parts, and offer a bearing surface for an impacting vehicle.

☛ The interior diameter of the slipbase sleeves is 13.5 inches. It was increased from 10.5 inches to accommodate predominant pole base diameters, which are typically 11.5 to 12.5 inches.

☛ The center of the hinge connector is positioned 14.5 feet above the slipbase cut line to provide clearance for most trucks and to avoid interfering with telephone lines attached 17-18 feet above ground level. The HBS design recommended cutting the pole 20 feet above the lower slipbase, but did indicate a cut section anywhere between 14 and 24 feet above the lower slipbase would be acceptable.

☛ To strengthen the hinge, threaded rods extend through the pole and replace lag screws to attach the hinge straps.

☛ The suspension strand supporting telephone lines is used for hinge activation and eliminates the support cable used in the original design.

☛ The slipbase flange thickness is 5/8 inches. It was changed from the original 3/4 inches to prevent flange warping caused from welding gussets to the flange and sleeve.

☛ A325 slipbase bolts are used rather than the originally specified A490 to avoid hydrogen embrittlement during the galvanizing process.

The AD-IV design differs from the HBS and FHWA designs in the following ways:

☛ Square base plates with a four-bolt connection at the shear plane are used rather than the circular plates with a six-bolt connection.

☛ The four rotation straps used at the upper hinge are simplified, eliminating three precisely machined holes used as a yielding mechanism in the other designs.

☛ A wind bolt on the hinge is used in conjunction with each rotation strap, providing the initial bending necessary.

The SRSP is designed to activate when an automobile hits the pole at speeds ranging from 32-96 kilome-

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Full-Scale Test of the Alaska Cast-in-Place Steel Shell Three Column Bridge Bent (8.5Mb)

by P.F. Silva, S. Sritharan, F. Seible, and M.J. Priestley
February 1999

This report describes the research investigation of a full-scale bridge bent conducted for the State of Alaska Department of Transportation and Public Facilities. The bent consisted of three cast-in-place steel shell columns and was designed using research funding from recently completed projects at the University of California San Diego (UCSD) to ensure a ductile performance under seismic loading.

Specific tasks investigated in this research project were: (1) column longitudinal reinforcement ratio; (2) straight bar anchorage of the column longitudinal reinforcement into the beam/column joints; (3) termination of the column steel shells below the cap beam; (4) flexural design of the cap beam to sustain maximum feasible input moments from the columns; and (5) shear design of the cap beam/column joints. Test results were then used to validate the procedure presented in this research project for the seismic design of reinforced concrete bridge bents with multiple column Cast-in-Place Steel Shells. Following the design of the test unit, we predicted the monotonic

force-displacement response using a pushover analysis program, and subsequently conducted seismic testing of the full-scale structure.

Experimental results indicated that the test unit responded in a ductile manner with column moment capacities developing in preselected hinges, and the ultimate displacement capacity was characterized by low cycle fatigue fracture of the columns longitudinal reinforcement, which matched satisfactorily with the theoretical predicted failure mode. In addition, processed test data and test observations confirm that no joint failure occurred, which ensured the development of the column ultimate moment capacities. Consequently, corroborated by experimental investigation, the design procedure was adequate in ensuring a ductile performance of the test unit.

In this report, we presented: (1) the design details of the test unit, (2) results of the pushover analysis, (3) test observations, (4) reduced test data, and (5) seismic design recommendations.

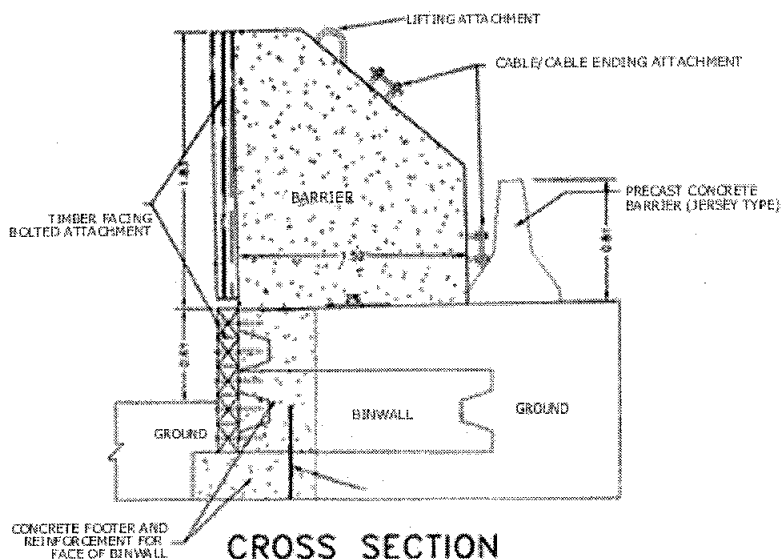
To get a copy of this report, see the T2 Web site, or contact our office at (907) 451-5320. •

Rockfall Mitigation Project

by Judy Atkinson, Alaska DOT&PF, D&ES

This DOT&PF project is located on the Parks Highway between mileposts 239 and 240 through the Nenana Canyon. This site has been a problematic slide area since the road opened in the early 1970s.

The purpose of this experimental feature project is to create a rockfall barrier that both protects the passing traffic and is safe to maintain. Available rockfall technology is not suitable for this project. The available technology typically falls short for one of two reasons. Either 1) the designs are immovable, which is not safe for Maintenance and Operations (M&O) to clean the catch ditch; or 2) they are



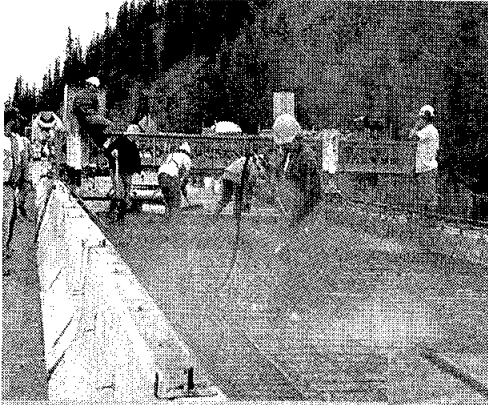
Repair, Rehabilitation, Strengthening and Replacement

Stephan H. Lee, P.E., Alaska DOT&PF, Bridge Design Section

During the spring and summer of 1999, DOT&PF contracted to rehabilitate three bridges located on the Richardson Highway, and the Hurricane Gulch Bridge,

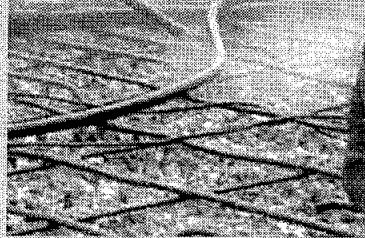
located on the Parks Highway.

Hydrodemolition removed the existing concrete decks, and a microsilica



concrete overlay replaced it. The Lowe River Bridge is located about 20 miles from Valdez. Klutina River Bridge is located about 106 miles north of

Valdez. The Salcha River Bridge is located about 328 miles north of Valdez or 40 miles east of Fairbanks. The Hurricane Gulch Bridge is located about 170 miles south of Fairbanks and is 558 feet long by 35 feet wide. The total area of deck rehabilitation was 6831 square yards.



We used high pressure (>20000 psi) water blasting equipment from the lower 48 in the hydrodemolition of the deteriorated and chloride contaminated concrete. A subcontractor from the lower 48 came to operate this equipment since it is not commonly used in Alaska. The bridges span over water, the hydrodemolition wastewater and debris was contained, collected, and disposed of in a manner acceptable to resource agencies. Primary containment included plugging drains and routing the wastewater along curblines, and secondary containment included containing any discharge from hydrodemolition blow-throughs at the underside of the deck. We collected the wastewater at the end of the bridge in a settlement lagoon and filtered it before releasing it into the environment. Aggregate residue was collected and disposed of at an approved embankment site.

Microsilica modified concrete was batched from a central pre-mix plant for the Salcha River Bridge, but the concrete was premixed and trucked to the bridge sites for truck mixing for the Klutina and Lowe River Bridges, and the Hurricane Gulch Bridge.

Additional rehabilitation work items included replacing bridge railings to provide the current crash-tested standard, modifying existing expansion joints, and widening of the abutment seat for Lowe River Bridge to correct a seismic deficiency.

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not sturdy enough to stop the massive boulders which come down the slope at the project site, which is not safe for traffic. Therefore, we have developed a design that will be movable for maintenance operations and sturdy enough to prevent most of the material from entering the roadway. It is unrealistic to expect to be able to stop all of the material that comes down at Nenana Canyon. We have designed a barrier that will stop the majority of rocks and debris (approximately 98%) and still allow M&O to safely clean the catch ditch without being trapped between an immovable barrier and the rock slope.

Our proposed solution involves movable rockfall barrier sections of reinforced concrete. The barriers include lifting attachments that allow DOT&PF's

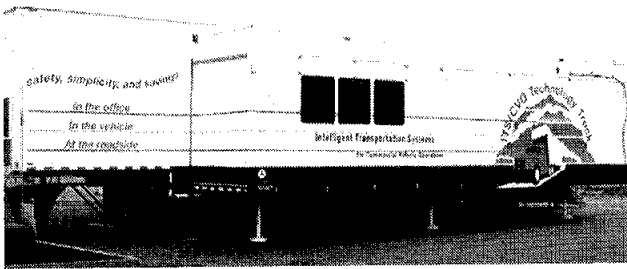
M&O section to use available state owned equipment to move them. The barriers also include cable attachments and cable ending attachments that are to be used to connect the barriers together. The barriers will sit atop a .6 m steel binwall for added height, which aids in stopping rocks. Additional concrete is placed behind the face of the binwall as reinforcement for M&O equipment to drive over during maintenance operations. The binwall will include rockfall inlets that surround existing culverts to protect them from damage during rockfalls. This experimental project includes the entire rockfall mitigation plan, including the reinforced concrete barriers, the attachments, the binwall, and the rockfall inlets. •

Technology Truck Comes to Alaska

by Chris Janssen, Alaska DOT&PF, Research & Technology Transfer

Welcome to the Federal Highway Administration's Intelligent Transportation Systems for Commercial Vehicle Operations (ITS/CVO) "Technology Truck." The State of Alaska hosted the truck August 16-26, in Fairbanks and Anchorage.

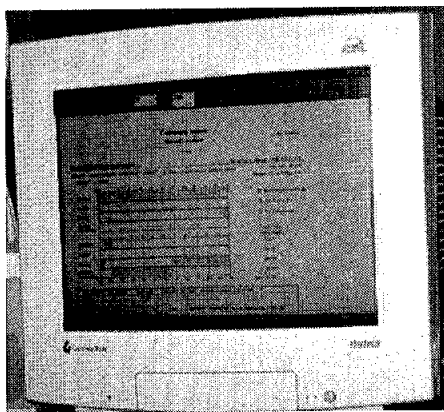
This traveling semi tours North America carrying



new technology from more than 80 public and private partners in its 48-foot expanding trailer. It houses portable ITS technology, a classroom facility, interactive kiosks, and a driver simulation area that includes information on devices being tested on the truck. The truck is designed to introduce the Commercial Vehicle Operations community, both public and private, to Intelligent Transportation Systems.

The truck presents technology in three categories: "In the Office," "In the Vehicle," and "At the Roadside." The interactive computer terminals have various fleet management systems for

visitors to check out. One terminal features Load Xpert-Pro, by CIE-TECH Inc. The program is for both management (In the Office), and the driver (In the Vehicle).



Visitors can access computers with fleet management software, like this Info Trax page.

The user selects the type of vehicle, trailer or tanker, and inputs the load specifications. With a few adjustments, the program graphically places the load in the diagram of the truck so the axle load complies with regulations and space is used efficiently. Programs such as "Truckin' Buddy," by Applied Arts Limited, can calculate the cost per mile and revenue per mile for each truck in a fleet, as well as calculating information for more advanced management reports and processes.

The mock truck cab allows the visitor to interact with new devices in situations similar to those drivers encounter everyday. The distance and movement of



visitors trigger collision avoidance systems in the display. The "Clarion Surround Sight" system, by Clarion Sales Corporation, uses a camera mounted on the rear of the truck that allows the driver to see clearly what is behind the truck on a monitor in the cab. "Blind-Sight," by Collision Avoidance Systems, Inc., uses sensors located around the truck (in the display, they are computer simulated) to determine the distance of vehicles, particularly those in the blind



Blind-Sight (above) displays information at the top of the driver's side mirror; in this case, warning the driver to stop.

The miniwriter (right) allows drivers to keep copies of forms with the option of a paper copy or a digital file.

The Technology Truck (far left) is a trailer that expands from 8.5 ft wide for traveling, to 34 ft wide for demonstrations and classes.

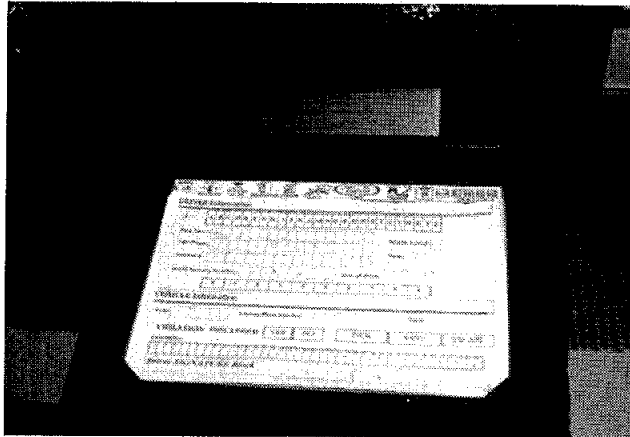
spots. Information is then displayed on a small strip at the top of the mirrors and on a lighted display in the cab.

Onboard com-

QUALCOMM to use their "Advanced Mobile Communications Solutions" information management system. The system allows the truck to remain in contact with Oak Ridge National Laboratories, where the truck is based. The system continuously tracks the position of the truck, which can be seen on the Web at www.qualcomm.com/omnitacks/techtruck/. The

system also notifies the driver of driving patterns, such as inefficient shifting, speeding, excessive idlerip idle, and some maintenance and performance issues.

Other technology of interest to those in CVO is displayed. Everything from automatic tire chains, to weigh-in-motion devices, spill containment, new brak-



Left: The QUALCOMM System links the Technology Truck to its base in Tennessee, as well as the web site tracking the truck. Right: Rockwell system for data logging and fleet tracking. Visitors have the opportunity to test both systems in the mock cab to see what options work best for their organizations.

ing technology, and mobile data entry devices are available for visitors to look at. The facilitators, Zeborah English, Project Manager; Connie Dagley, Operations Liaison; Wilbur Thomas, Driver; and John Catron, Driver, demonstrate the uses of the devices. They give a tour of the truck, pausing often for questions and comments about the technology. Touring with the Technology Truck is a time consuming effort. The truck is on the road much of the time, only returning to base one weekend a month, two weeks in July, and one month at Christmas. The long schedule allows them to make stops at every place that requests a visit. Any organization can request a visit from the truck. Scheduling may require a bit of flexibility and consideration of visits to other organizations in common regions.

For more information on the program, visit the Web site at www.avalon-ais.com/itscvo/, and www.ornl.gov/dp111, or contact Zee English, Project Manager, FHWA- ITS/CVO Division 400 7th Street, S.W.- Room 3419 Washington, DC 20590, Fax: (202) 366-7908. •

puter systems are becoming a more intricate part of CVO. Systems, such as the one designed by XATA Corporation, offer a variety of options, including onboard fuel management, electronic logs, route layout, GPS (Global Positioning System) functions, and two-way messaging between operations and the driver. The ITS/CVO Truck has an agreement with

The Luddites vs. the Technologists

Of course, a lot of technology will weigh you down, and that can be a real factor when you're delivering 20 presentations in 18 cities during the next 30 days. Some presentation pros still prefer to carry only flip-chart pages or overhead transparencies, claiming the fool-proof operation and light weight can't be beat. They have a point, but technology proponents argue that effectiveness is more important than comfort.

Jim Endicott, manager of client services for LCD projector manufacturers In Focus Systems, is a self-described evangelist for the increased use of technology in presentations. Endicott travels two or three times a month, notebook computer and projector in tow, to convince companies throughout the country to power up.

"Companies still using flip charts need to know there's a whole new way of presenting that will make their presentations more dramatic, effective and successful," he says. "And they don't need to spend a lot of money to get there."

Like Endicott, Tim Bjarin, president of the technology consulting firm Creative Strategies, is a strong believer in the power of presentation technology. He gives approximately three presentations a week about technology-related issues.

"You need to be legitimate and impressive in your presentations, and in this day and age, overhead transparencies alone just don't make it," Bjarin says. "You need an extremely good, reliable notebook and a light source, such as a lightweight projector. And you need good presentation software that will be interactive."

Bjarin acknowledges that computers are not perfect, but he never travels without one. "They can be my No. 1 problem on the road," he says. "At times I have carried along two notebooks, one for backup."

THE TOOLS YOU PACK MAY VARY BY VENUE

Bjarin says his presentation tool kit changes depending on where he's presenting, and this is a lesson for all traveling presenters. If he's giving a presentation for a few people in a client's office, he carries everything himself — notebook computer, projector, remote control, the works. If he's addressing a large group at a hotel or conference center, he will rely more on the facility's

audiovisual department.

"If I'm going to a convention, I only take my laptop," he says. "The AV department will usually provide me a projector. But I typically take a second laptop as a backup and a disk with my presentation on it as well."

Whatever tools you choose, whether new technology or old standbys, most presenters agree on one thing: Control what you can. Don't rely on others to supply them. If you can bring your own projector, do so. If you're speaking at a convention, send detailed instructions to your hosts well in advance.

Expect Murphy to Accompany Your Luggage

As any road warrior will tell you, Murphy's Law affects every traveling presenter at some time. If it can go wrong, it does go wrong when you're on the road:

Computers fail.

Batteries die.

CD drives crash.

Microphones short out.

Projectors grow dark.

Adapters refuse to adapt.

Presenters get the hiccups.

And most humans make some mistakes.

No matter how carefully you've planned your presentation, some element may misfire. There's a lesson here from the Boy Scouts: BE PREPARED.

It can happen to anyone, as presentation coach Tom Leech can attest. He once spent several weeks coaching a team to do a major sales presentation until they were ready for a flawless delivery. "Our team developed and honed a morning-long presentation, which would incorporate computer-based graphics and projection. We had top computer experts on board and we tested the equipment many times, without a snag. At the presentation, our program director introduced the first technical speaker, whereupon the computer system conked out," he says.

Frequently traveling presenters are, by necessity, masters of the art of thinking on their feet. The show must go on. "Our team went into action, and within two minutes we were operating again," says Leech. "We had a backup system — those old standbys, overhead trans-

parencies. Because we were prepared with a backup, we were able to achieve a successful presentation and win a major contract.”

REMEMBER, your presentation’s success is directly related to how much preparation and practice time you put in before stepping to the podium, but the tools you use to communicate are equally important. Give them the consideration they deserve and your presentations will be more effective. Here’s to successful presenting on the road.

PRO’S TRAVEL TIPS

1. Make a list of what you need to bring.
2. Make sure your notebook is fully charged.
3. For a multiple-day trip, coordinate your wardrobe before you leave.
4. Use flight time to mentally prepare for your presentations.
5. When you arrive, immediately set your watch to local time.
6. Find out whether your speaking venue is next to a kitchen (if so, give strict instructions about noise during your presentation).
7. Arrive early.
8. Rehearse, especially if you’re working with a partner.
9. Take care of your equipment.
10. Get to know your presentation software well enough to make changes on the fly.

NHI TIP OF THE MONTH

NHI Helps to Tool (and Retool) Instructors

The National Highway Institute’s new Instructor Development Course includes a unit on creating your own trainer’s tool kit. In the course, Nancy Rosenshine starts the list for the groups with standards like extra markers, masking tape, and sticky notes. The groups then quickly add their own personal “never-leave-home without-it” lists, including a three-prong adaptor, bandages, and moist towelettes.

If you would like to contribute your own essentials (usually discovered during a harrowing training experience) NHI will add them to the list that we share with all of our trainers and presenters.

OUR TOOL KIT

- ☆ Fresh markers (including dry erase markers and erasers if white boards are to be used)
- ☆ Chalk and erasers if black boards are to be used

- ☆ Tape
- ☆ Scissors
- ☆ Push pins (Make sure it is permissible to use them)

- ☆ Blank transparency film and pens
- ☆ Stapler and staple remover
- ☆ Three-hole punch and reinforcements
- ☆ Sticky dots for multi-voting and nominal-group activities
- ☆ Prepared flip charts
- ☆ Extra light bulbs for overhead and/or slide projector
- ☆ Extension cord with three-pronged adapter

Additional luxury items might include:

- ☆ Laptop computer and portable printer
- ☆ LCD unit for Power-Point presentations and halogen overhead for clear projection
- ☆ Access to a fax modem, e-mail, Internet, and other on-line resources
- ☆ Can you think of others?????

MATERIALS and VISUALS

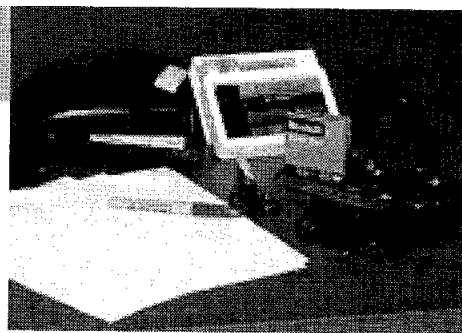
It is important to thoroughly edit all materials and visuals. Using an experienced colleague or editor/proof-reader will avoid the problem of reading what you think you wrote or meant and overlooking mistakes in grammar, spelling, syntax, or usage.

In addition:

- ☆ Ensure that materials are on hand and in order. Call the training site well in advance to ensure that all boxes have been received.
- ☆ Track and/or replace missing materials.
- ☆ Arrange materials in order in a loose-leaf binder in sheet protectors.
- ☆ Check availability of on-site or nearby copying facilities and costs for last-minute duplication of materials, should pages be missing or should participants bring additional relevant materials or handouts.
- ☆ Be sure to use proper citations and obtain written permission to reproduce and distribute copyrighted materials.

LOGISTICS

The following logistic checks will help you to avoid last-minute problems or surprises:



continued on page 12

Check the site well in advance to ensure that the room is flexible enough to allow for rearrangement.

Arrive early to ensure that the room has been set up correctly.

Ensure that chairs are comfortable, as participants may be sitting for extended periods of time.

Check and recheck audiovisual equipment in advance and arrange to replace faulty equipment.

Carry an extra bulb for overhead projectors.

Test transparencies to make sure they can be seen.

Make sure there are plugs at convenient locations and that there are enough extension cords.

If refreshments for breaks and/or meals are to be provided, be sure they are delivered and/or served on time, so as not to disrupt sessions. High-energy foods and juices are helpful for breaks, especially in the afternoon when attention is likely to wane.

If meals are to be served (e.g., for working lunches), take some time to serve and finish before the working session begins, so that serving and eating do not become distracting.

Ensure that easels are strong enough to hold pads (many are too flimsy) and check markers to be sure they have fresh ink. Throw away stale markers.

Check the supply and condition of pens, pencils, and

note-taking paper if they are to be provided.

Put the caps back on markers, or they will dry out.

Make sure enough tables have been provided for materials, handouts, etc.

Be sure to inform all participants, ideally in writing in advance, of your expectations for their attendance.

Accept no excuses (except for emergencies). It is extremely disruptive to participants for others to move in and out of sessions and it is difficult to brief late arrivals and unfair to those who have arrived on time.

Check with the group periodically to see where they are, energy-wise, and in their grasp of the content. Readjust your style, schedule, and content or process emphasis, if necessary.

Relax and have fun. Participants will do likewise. *Permission has been obtained to adapt and reprint this article from the June 1997 issue of Presentations magazine. Copyright 1997, Lakewood Publications. (800)707-7749. www.presentations.com.* •



continued from page 3

require more effort as long-distance vision becomes poor.

Slower reaction time should mean slower speed. Hearing difficulties should mean more attention to mirrors. Lack of concentration or over confidence can lead to small mistakes: not yielding right-of-way, not allowing adequate gap for left turns, merging, and trouble negotiating intersections. The best idea is to travel on off-peak hours and stick to roads with lower speeds. Regular eye and medical exams are important to both the driver's safety as well as that of passengers and others using the road system. The driver, with support from family and a physician, should consider that at some point, it may be necessary to stop driving.

Seat Belts

Don't forget **seat belts**. They are an important part of road safety as well. These facts on seat belt use come from the Web site for Advocates for Highway and Auto Safety (<http://www.saferoads.org/facts/fs-stand.html>). Safety Belt and Child Safety Seat Facts:

- ◇ Lap-shoulder belts are 40-50% effective in reducing deaths and 45-55% effective in preventing moderate-to-critical injuries to passenger vehicle occupants. (National Highway Traffic Safety Administration)
- ◇ Safety belts are credited with saving the lives of 10,750 passenger vehicle occupants in 1997. (NHTSA)
- ◇ Average inpatient costs for traffic crash victims who did not use safety belts were 55 percent higher than for victims who were belted. (NHTSA)
- ◇ Motor vehicle crashes are the leading cause of death for children from age 5 to 16 years. In 1997, 2,087 children under age 16 died in traffic crashes and another 320,000 were injured. (NHTSA)
- ◇ Six out of ten children who die in passenger vehicle crashes are unbelted. (NHTSA)
- ◇ When properly used, child safety seats reduce the risk of death by 69% for infants and by 47% for toddlers (NHTSA)
- ◇ From 1975 through 1997, an estimated 3,894 children's lives were saved by safety belts and child safety seats. (NHTSA)

Work Zones

Work zones are dangerous places, for both drivers and those working in them. Drivers who try to beat other cars when merging, drive faster than posted signs, are distracted, or use drugs or alcohol cause hundreds of accidents a year in work zones, many resulting in death. Read the Safety & Health section for more information on work zone dangers and new safety devices designed to reduce the danger.

Safety Steps

The *Advocates for Highway and Auto Safety* (<http://www.saferoads.org/facts/tips.html>) include nine tips in their campaign for **Safe and Alert Driving**.

Before You Get Behind the Wheel:

1) Have a clear head. Make sure you always have a clear head before deciding to operate a motor vehicle. Alcohol and certain drugs, both illegal and legal, can severely impair your driving skills. Many prescription and over the counter medications can cause dangerous drowsiness. Get a good night's rest and don't drive for long stretches without a break. If you are tired, don't risk the safety of yourself and others on the highway by trying to drive. Just as with alcohol — designate a driver or choose another means of transportation such as a taxi cab or public transportation.

2) Limit driving when tired.

Facts about work zones:

- 719 people died in crashes in highway work zones in 1996, the last year for which national statistics are available—that's more than two each day. (Okla. DOT)
 - Nationwide, more than 37,000 people suffered disabling injuries in work zone crashes in 1996. That's more than 100 each day. (Okla. DOT)
 - In the last five years, about 3,700 people were killed and more than 100,000 were injured in highway work zone crashes. (FHWA statistics)
 - More motorists are killed and injured in work zone crashes than highway workers. (Mich. DOT)
 - "Give em a Brake," a national work zone safety campaign, focused attention on protecting highway workers, but motorists are more likely to crash into other motorists than construction workers. (Wis. DOT)
 - The most common crash in a highway work zone is the rear-end collision; one in three crashes in work zones is a rear-end collision. Crashes in non-construction areas are more commonly angle or sideswiping crashes. (Wis. DOT)
 - The two major reasons for work zone crashes (Wis. DOT and S&C Research, 1996): speeding, and inattentive driving.
 - Four out of five drivers in a recent survey said they slowed down when they entered work zones. However, when these same drivers were clocked on radar, none of them actually did. (Wis. DOT)
 - It takes less than a minute more to travel through a two-mile-long work zone at 45 m.p.h. than at 65 m.p.h.—52 seconds, to be precise. (Mich. DOT)
 - Drivers take a terrible risk when speeding through work areas. There is little room for maneuvering and virtually no margin for driver error. (Mich. DOT)
 - At 60 m.p.h., a vehicle travels 88 feet per second. In the 3/4 second it takes to put your foot on the brake, you've gone 66 feet ... 180-220 before the car stops. In other words, if you speed, by the time you see a problem, you're probably out of luck. (Mich. DOT)
 - An orange-striped wooden barricade or a string of orange cones or barrels won't stop a 3000-pound car hurtling at you at 88 feet/second. (Wis. DOT)
 - Areas where traffic is entering or leaving work zones are most dangerous because that's where drivers are jockeying for position. (Wis. DOT)
- Reprinted with permission from the National Workzone Safety Clearinghouse Website at <http://wzsafety.tamu.edu/files/facts.stm>

Driving with someone else in the car can increase your overall alertness. It is well recognized that when driving alone, especially when sleep deprived and at night, your chances of a crash are dramatically increased.

3) Read the labels. If you are taking any medications, be sure to read and obey the warning labels. If the label says the medication causes drowsiness or not to drive — heed the warning and don't drive. The warnings are there for a reason. Consult with your doctor or pharmacist if you have any questions or to ask about medications for your condition that don't cause drowsiness.

4) Plan ahead. Allow yourself plenty of extra time to reach your destination and allow for emergencies or traffic jams. In today's busy world most of us are in a hurry to get where we are going. By allowing extra time, we can be more relaxed when operating our vehicles and thereby cut down on the incidences of road rage, such as excessive speeding, tailgating and weaving in and out between cars.

5) Research safety features. Safety should always be a top priority when shopping for a vehicle. Research the safety performance of any vehicle you are considering buying

continued on page 19

ters per hour (20-60 miles per hour). Only the hinge's four metal straps, the slip base's keeper plate, and some bolts, nuts, and washers should need to be replaced.

Suppliers

The hardware, poles, polyurethane filler, etc. for the Kentucky and Massachusetts installations were purchased from a contractor who is no longer in business. The hardware for the Texas retrofit installations was fabricated by and purchased from the Syro Steel Company. The hardware for the Virginia retrofit installations was fabricated by and purchased from a local supplier.

Costs

The approximate installation costs per breakaway timber utility pole were as follows:

Kentucky HBS Retrofit Design

\$1,260 — Materials

\$1,450 — Labor and Equipment

\$2,710 — Total Cost Per Pole

Massachusetts FHWA New Pole Design

\$2,600 — Materials

\$3,000 — Labor and Equipment

\$5,600 — Total Cost Per Pole

Texas AD-IV Retrofit Design

\$1,250 — Materials

\$? — Labor and Equipment

\$? — Total Cost Per Pole

Virginia FHWA Retrofit Design

\$? — Materials

\$? — Labor and Equipment

\$6,000 — Total Cost Per Pole

Massachusetts believed the additional cost of new poles was justified in order to eliminate unknown variables associated with older existing poles. Massachusetts was also required to provide insurance on the poles, which, as it turned out, was not needed.

Location Considerations

Location considerations are as follows:

⇒ A SRSP should generally be installed at a location where existing utility poles have been involved in accidents, or where the potential for such accidents is very great.

⇒ A SRSP should not be installed at a location where it is more feasible to remove the existing utility pole, to place the utility line underground, or to relocate the existing utility pole farther away from the roadway where it is less likely to be struck.

⇒ A clear recovery area must be available behind any utility pole that is modified with yielding hardware so the device has room to perform properly.

⇒ Use of a yielding design may not be appropriate where an impacted pole might fall on pedestrians or nearby buildings or where fallen wires could interfere with traffic.

⇒ Field installations demonstrated that the device will perform satisfactorily in non-tangent roadway sections.

Funding

Federal-aid funds can be used to install SRSPs on Federal-aid highway projects up to a 100% pro rata share if the State can pay for this work and desires to use its Federal-aid highway funds for this purpose.

Videotapes & Reports

FHWA has the following videos and reports available:

⇒ *Breakaway Timber Utility Poles*, 1989 — 15-min. videotape depicting the procedure used in Kentucky to retrofit existing utility poles with a breakaway device. (Loan, may be reproduced).

⇒ *Breakaway Timber Utility Poles, Intro Video*, 1995 — 10 min. videotape introducing the use of breakaway timber utility poles and depicting procedures used in Kentucky and Massachusetts to install the poles' (Loan, may be reproduced).

⇒ *Breakaway Timber Utility Pole Installations in Kentucky*, 1991 - evaluation of the Kentucky breakaway timber utility pole project. (Free photocopy).

⇒ *Summary Report: The Breakaway Timber Utility Pole: A Survivable Alternative (The Massachusetts Experience)*, 1993 — evaluation report of the Massachusetts breakaway timber utility pole project. (Free

copy).

☞ *The First Installation of Breakaway Timber Utility Poles in Texas*, 1995 — draft evaluation report of the Texas breakaway timber utility pole project. (Free photocopy).

☞ *Construction Report, Breakaway Timber Utility Poles*, 1996 — evaluation report of the Virginia breakaway timber utility pole project. (Free photocopy).

FHWA Contact

General information about breakaway timber utility poles, including copies of the above-mentioned video-

tapes and reports may be obtained from:

Paul Scott, Federal Highway Administration
HNG-10, Room 3134
400 7th Street, SW.
Washington, D.C. 20590
(202) 366-4104, Fax (202) 366-3988

*Reprinted with permission from Federal Highway Administration
Web site <http://www.ota.fhwa.dot.gov/tech/safety/te24.html>,
January 4, 1999.* •

Hands-On Grader Training Successful

by Sharon McLeod-Everette, Alaska DOT&PF,
Research & Technology Transfer

T2 presented the second series of grader operator training; one class was in Soldotna July 12-16, and the second class was in Palmer, July

19-22. Grant Weir and Larry McAllister, Operating Engineers Training Trust, taught the first day of each class in the classroom. The rest of the week was spent completely with hands-on training. About thirty-two people went through

the training.

The training could not have occurred without the advance logistics, training space, and equipment that others provided. We are most grateful to the City of Soldotna, DOT&PF in both Soldotna and Palmer, Kenai Peninsula Borough

Public Works, Central Kenai Peninsula Fire and EMS Providers-Central Emergency Services, Mat-Su Borough Public Works, Operating Engineers Training Trust, and Kopperud Transportation.



Participants attended classes taught by Grant Weir and Larry McAllister before getting behind the wheel of one of the graders. Further instruction was given on-site.



Danger in the Highway Work Area

by John O. Hibbs, PE, Kentucky LTAP Center

More laborers are killed in highway construction work zones than in any other type of construction.

While working in a highway work zone, one would expect that a greater chance for injury or death would come from the fastest moving vehicles near the worker—such an assumption is not wrong. Workers must stay alert to fast-moving traffic in the lanes adjacent to the work area, especially if there is no physical divider such as a concrete barrier. However, this is not the only danger to highway personnel in work zones. A recent study completed by several labor union safety organizations and Johns Hopkins University focused on accidents within the work area that are not caused by intrusions from the highway traffic stream.

What is the greatest danger to highway workers from within the work zone?

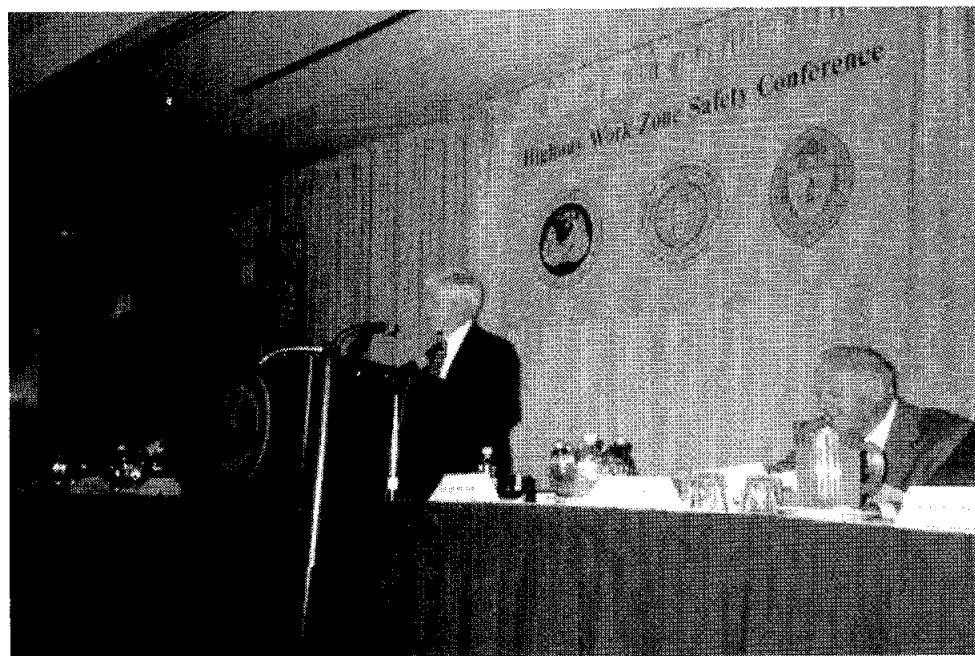
This study shows that the greatest danger for laborers is dump trucks. More than half of the lives

lost during the study period were the result of dump-truck accidents. Highway worker deaths totaled 125 in 1995. Of the dump truck deaths caused by backing where there was an Occupational Safety Health Administration (OSHA) investigation, 56 percent of the trucks did not have an operational backup beeper.

Keep in mind that the number of fatalities, 125, were highway workers. Certainly, this is an alarming number, but during the same study period there were an additional 771 fatalities of vehicle occupants and pedestrians reported by the National Highway Traffic Safety Administration for accidents in the vicinity of highway work zones. This article is not intended to take away from the importance of good traffic control for highway drivers and pedestrians; however, the labor study findings reveal that more attention is needed for the equipment movements within the work area. This was the primary focus of the labor study. As



New markers developed to improve safety in highway work areas. The markers are used to call attention to overhead power lines that are often struck by construction equipment such as dump trucks and cranes.



A two-day workshop was held in Washington, DC, to present findings for improved safety in highway work areas. Mr. Brian M. McQuade, Executive Director, Laborers' Health & Safety Fund of North America served as moderator for the workshop.

part of the study, subcontractor Graham/Migletz Inc. of Independence, Missouri, completed a project to show how internal traffic control plans need to be developed and followed to minimize the need for backing and other hazardous movements, and/or to make them as safe as possible.

Safety Devices Suggested

The labor study produced some intervention devices that allow the truck-spotter to more effectively communicate with the drivers who are backing up. A significant number of the backing accidents occurred when someone was watching, but was unable to communicate with the driver quickly enough to stop the truck. One device created is a sounding unit that hangs on the window of the truck. The spotter has a transmitter to activate the sounding unit and alert the driver when to stop. This device can be constructed from off-the-shelf products found at Radio Shack. More elaborate devices will allow the spotter to actually lock the brakes of the backing truck when danger occurs.

Another example of a device coming from the labor study is a sleeve to place over a standard traffic cone to call attention to overhead power lines. Seventeen percent of dump-truck fatalities were the result of hitting overhead power-lines with the truck bed up. The sleeve is a strong, yellow-green plastic covering with wording and electrical symbols pointing upward. Thus, the special cones can be placed under the power lines so a driver and the spotter can be continually reminded of the overhead danger.

Another product of the study is an instructional package for training highway workers to avoid dangers in the work area. It will be ready in a few months and should be of much interest for Local Technical Assistance Program (LTAP) training sessions.

The Laborers' International Union of North America, Laborers' Health and Safety Fund of North America, and the Johns Hopkins University completed the labor study.

The Federal Highway Administration funded the three-year study with slightly over one million dollars, as provided by federal legislation. Data were gathered from labor safety records, participating contractors, the National Highway Safety Administration (NHTSA), and Occupational Safety and Health Administration (OSHA) resources. A two-day workshop was recently presented in Washington, D.C., to report the findings.

The labor study is considered to have produced valuable information, helpful for improving safety for highway workers. It was completed with a cooperative effort between labor, management, government, and academia since each has a strong interest and responsibility for the safety of highway workers. The cooperative partnership will prove beneficial in meeting the following objective that was stated repeatedly during the two-day workshop:

The goal is to send every highway worker home safely at the close of each day! •

Date	Event	Sponsor/Contact	Location
October 7-8	Practical Negotiations for Right of Way Acquisition Agents, Negotiators, & Supervisors	IRWA, Lori Landis @ (907) 269-0695, Fax: (907) 248-9456	Anchorage, Alaska Westcoast International Inn
October 20-22	APWA Fall Conference	City of Yakima, Nancy Gaudette @ (509) 575-6005	Yakima, Washington Yakima Convention Center
October 25-26 October 27-28 November 1-2	Americans with Disabilities Act (ADA) Training	Alaska T2 Center, Simon Howell @ (907) 451-5482, Fax: (907) 451-5340	Fairbanks, Alaska Anchorage, Alaska Juneau, Alaska
October 25-27 Oct. 28-Nov. 1 November 3-5	Design, Construction, and Maintenance of Safe Roadsides	Alaska T2 Center, Simon Howell @ (907) 451-5482, Fax: (907) 451-5340	Anchorage, Alaska Fairbanks, Alaska Juneau, Alaska
November 15-16	IRWA Course 207 Practica Negotiations for U.S. Federal Funded Land Aquisitions	IRWA, Alaska DOT&PF, Pat Thayer @ (907) 451-5419, Fax: (907) 451-5411, www.irwa.com	Fairbanks, Alaska Last Frontier Club, Ft. Wainwright
Nov. 30-Dec. 2	NHI 13132: Hot Mix Asphalt Construction	Alaska T2 Center, Sharon McLeod-Everette @ (907) 451-5323, Fax: (907) 451-5340	Anchorage, Alaska
Jan. 31- Feb. 6, 2000	ISCORD 2000, Sixth International Symposium on Cold Region Development	Convenor GPO, ++61-3-6233 5492, Fax: ++61-3-6233-5497, thughson@oaa.tas.gov.au	Hogbart, Tasmania, Australia University of Tasmania
February 13-17, 2000	NAPA 45th Annual Convention	NAPA, Carol Prouty, 1-888-468-6499, Fax: 1-301-731-4621	Hawaii Hilton Waikoloa Village
August 8-9, 2000	The Cold Weather Show	Osprey USA, (703) 451-1444, Fax (703) 440-1272	Arlington, Virginia Hyatt Regency at Crystal City
September 28-30, 2000	Seventh National Conference on Transportation Planning for Small and Medium-sized Areas	Arkansas State Highway & Transportation Department, Virginia H. Porta @ (501) 569-2602, Fax: (501) 569-2476	Little Rock, Arkansas Doubletree Hotel

Meetings Around Alaska

Society	Chapter	Meeting Days	Location
ASCE	Anchorage Fairbanks Juneau	Monthly, 3rd Tues., noon Monthly, 3rd Wed., noon Monthly, 2nd Wed., noon*	Northern Lights Inn Captain Bartlett Inn Westmark Hotel *except June-Aug.
ASPE	Anchorage Fairbanks Juneau	Monthly, 2nd Thurs., noon Monthly, 1st Fri., noon Monthly, 2nd Wed., noon*	West Coast International Inn Captain Bartlett Inn Westmark Juneau Hotel *except June-Aug.
ASPLS	Anchorage Fairbanks Mat-Su Valley	Monthly, 3rd Tuesday., noon Monthly, 4th Fri., noon Monthly, last Wed., noon	Executive Cafeteria, Federal Building Ethel's Sunset Inn Windbreak Cafe; George Strother, 745-9810
ITE	Anchorage	Monthly, 4th Tues., noon	Sourdough Mining Company
IRWA	Sourdoughs Ch. 49 Arctic Trails Ch. 71 Totem Ch. 59	Monthly, 3rd Thurs., noon** Monthly, 2nd Thurs., noon** Monthly, 1st Wed., noon	West Coast International Inn Oriental Garden Restaurant Mike's Place, Douglas **except July & Dec.
ICBO	Northern Chapter	Monthly, 1st Wed., noon	Zach's Sophie Station
AWRA	Northern Region	Monthly, 3rd Wed., noon, Brown Bag Lunch	Rm 531 Duckering Bldg., University of Alaska Fairbanks, Larry Hinzman, 474-7331
PE in Government	Anchorage	Monthly, last Fri., 7am	Elmer's Restaurant

Good-bye to Gobbledygook

How would a Federal Government that used plain language operate? The answer, of course, is "better!" On June 1, 1998, in a Presidential Memorandum on Plain Language, President Clinton directed the heads of executive departments and agencies—including FHWA—to do the following:

- ◇ By October 1, 1998, use plain language in all new documents (other than regulations) and by January 1, 2002, rewrite in plain language all documents created prior to October 1, 1998.
- ◇ By January 1, 1999, use plain language in all proposed and final rulemakings published in the *Federal Register*, and rewrite in plain language existing regulations as time and resources permit.

continued from page 13

including how the vehicle performs in crash tests. Both driver and passenger side air bags are now mandatory in all new cars. Look for side impact bags in many new models as well. When buying a used vehicle, look for one with air bags. Research what type of safety systems are in the car and choose the safest to protect you and your loved ones in the event of a collision.

In the Driver's Seat:

6) Relax. Avoid aggressive driving by relaxing and having patience. By not being in such a rush to reach your destination, you will be a calmer person and won't need to speed and run red lights. A yellow light means slow down, not speed up. Always stop at red lights.

7) Be alert to signs of fatigue. If you start to feel tired when driving, pull over in a safe area and let someone else drive. If you are alone, pull into a safe location such as a well-lit rest stop and take a short nap or get out of the car and walk around for a few minutes. Stop as often as necessary. When traveling on long trips, eat light. Large, heavy meals can make you drowsy.

8) Practice common sense safety rules. Always wear your safety belt and make sure all your passengers are buckled properly, even on short trips. If traveling with children, educate yourself on the many kinds of child safety seats and restraints. Choose which system is best for your child and always follow the directions. Make sure children ages 12 and under are always buckled up in the back seat, the safest place to ride.

The hope is that in only a few years, citizens will not only expect, but will get, Federal Government documents that are written with clarity and are easy to understand and use.

As one means of encouraging Government agencies to take the step for gobbledygook to clarity, Vice President Gore presents monthly "No Gobbledygook" awards to recognize documents that have been rewritten in plain language, as well as the writers who revamped them.

To find out more about the Plain Language Program, visit the Web site at plainlanguage.gov. The site includes information and links to numerous writing references, training courses, and other resources on good writing.

Reprinted with permission from Focus, February 1999, Federal Highway Association. •

Speed affects safety on the highways, too. Just decreasing your speed increases safety. A study by Swedish researchers from the Swedish National Road Transport Research Institute (*Nordic Road and Transport Research*, No. 1, 1999) finds that:

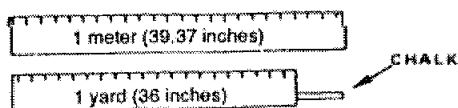
- ◇ A speed reduction from 55 km/h to 50 km/h, or from 110 km/h to 100 km/h reduces the risk of being injured by almost 20%. The reduction in risk is related to the square of the difference in speed.
- ◇ The corresponding reduction in speed reduces the risk of severe injury by 25%. The reduction in risk is related to the third power of the difference in speed.
- ◇ The same reduction in speed reduces the risk of being killed by more than 30%. The difference in risk is related to the fourth power of the difference in speed. •

9) Keep your eyes on the road. Avoid taking your eyes off the road by eliminating any possible distractions ahead of time. Before setting out on a drive, be sure that important items are within easy reach, i.e. directions and maps, sunglasses, etc. Reduce to a minimum possibly dangerous diversions of your attention from the tasks of safe driving such as changing tapes or compact discs, and **always** pull over to a safe place to use your cellular telephone. •

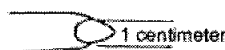
ANTOINE FRAME-OF-REFERENCE METHOD . . . FAMILIAR-ITEM EXAMPLES

(drawings excerpted from the book, *Quick Guide to the Metric System*)

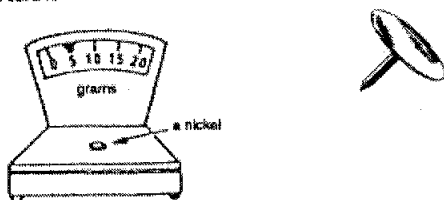
1 meter
(or 1 m) = about a yardstick plus the length
of a piece of chalk



1 centimeter (or 1 cm) = the width of
some part of your smallest finger or
fingernail

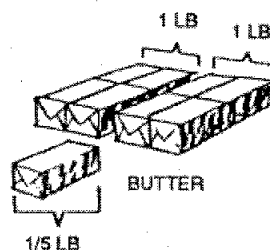


1 gram
(or 1 g) = about the mass of a large
thumbtack



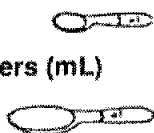
a nickel = about 5 grams (or 5 g)

1 kilogram (or 1 kg) = about the mass
of 2.2 pounds of butter

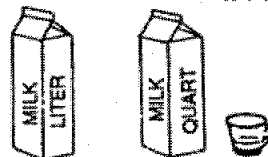
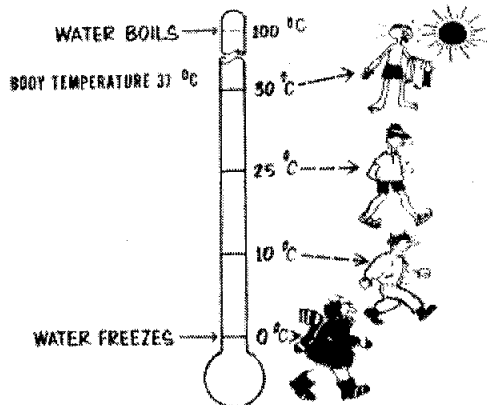


1 milliliter
(or 1 mL or 1 ml) = 1/5 tsp

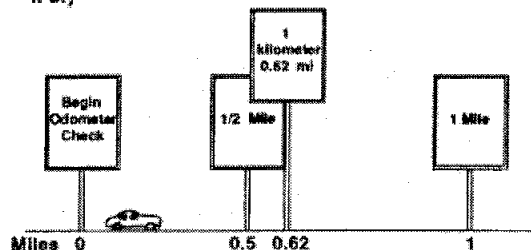
1 tsp = 5 milliliters (mL)



1 liter **EQUALS** **1 quart plus**
(or 1 L or 1 l) **1/4 cup = 1 liter**

**Metric Temperature (degree Celsius)**

1 kilometer (or 1 km) = a little more than
half a mile (pronounced KILL-oh-meet-ur not kill-AHM-
It-ur)



U.S. Metric Association Inc (818) 368-7443
10245 Andasol Avenue Northridge CA 91325-1504

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Web site at <http://lamar.colostate.edu>, June 29, 1999. •

Investigation and Development of a Residency-Level GIS to Support Priority Applications

Editor's note: As a follow-up to the Summer 1998 edition of "Technology for Alaskan Transportation," we are including a story about how Virginia is using GPS and GIS technology. A residency is a small work unit within VDOT; VDOT is responsible for all roads in Virginia. VDOT has nine districts with 45 residency offices, each responsible for two or three contiguous counties. A full copy of the report is available by faxing a request to Eileen Dieck at (804) 293-1990.

Can GIS Help DOT Residencies? We Think It Can...

Virginia Department of Transportation's (VDOT) Geographic Information Systems (GIS) Lead Unit has developed a strategic plan for implementing an integrated GIS program in Virginia. Several of the strategies address the larger institutional actions required to implement this type of a technology on such a large scale. Other strategies are geared toward end-users of the system and how data will be collected to support the GIS. One of the goals is to produce near-term data and user-support products.

We decided to identify and develop a set of priority applications and data collection methods that could serve as a catalyst for implementing a residency-level

GIS. We decided on five applications: a guardrail inventory, a sign inventory, a drop inlet inventory, a railroad-highway grade crossing inventory, and a method to calculate mowing area. Because of the volume of data needed for each application and the time needed to investigate alternative methods of data collection, we limited the collection area to the interstate and primary roadways on Albemarle County, Virginia.

Developing the Data Collection Methods

For each of the five applications, we looked into using aerial photographs; hard copy maps, such as graphic logs; GPS receivers; and a laser range finder used independently and in conjunction with the GPS receivers. We evaluated the methods based on time required to capture data, equipment needed, and expertise needed.

Once we chose the method (i.e., GPS), we captured a subset of each of the five data sets to test it, refining the logistics as we went along. Depending on the data set, we repeated this collection-change-collection process until we developed the final method.

continued on page 22

Internet Update

The National Transportation Library is on the internet. If you need to get a publication, this site probably has it. Even if you only have a topic, you can browse through the publications listed under that topic. The site will soon incorporate TRIS (Transportation Research Information Service) online for more advanced searches. The address is:

<http://www.ntl.bts.gov/>.

For links to many state and local government information sites, try www.statelocal.gov/. Most agencies are linked to this site.

Again, don't forget to check out the National Work Zone Safety Clearinghouse online. It has information about the latest safety campaigns, safety data, equipment, and studies. The address is <http://wzsafety.tamu.edu/>.

Big Dog's HR Deveopement Page, at <http://www.nwlink.com/~donclark/hrd.html>, has information about human resources as well as links on training anther work place issues. •

We then collected each data set, documenting the methods used, time required to collect and post-process the data, safety considerations, and any associated problems. Based on the analysis of these data, we developed methods for collecting similar data sets.

A Residency-Level GIS Can Work...

To make the GIS useful for residencies, the data must be very detailed. The resolution of most affordable remote sensing sources, such as satellite imagery or aerial photography, is insufficient to meet the needs of a residency. Most likely, you'll need to collect the data using GPS and visual observations. In most cases, this takes more time, labor, and money than remote sensing, but the end product is more accurate.

For most of the applications we developed, GPS was the best mode of data collection. It provides accurate spatial information and allows extensive attribute storage. It also allows for a one-step data transfer process to almost any GIS platform, which means the data are available for use almost immediately.

For the most part, the features we inventoried need to be inventoried only once, since they don't typically change over time. Conceivably, you could use a portable computer with a GIS to update asset information in the field. In contrast, using aerial photographs or graphic logs for updating would require recollect-

ing the data sets in their entirety.

To ensure accurate results, you must determine the method of data collection as carefully as the mode of data collection. For example, we determined that GPS was the best mode for guardrail. However, we had to develop two methods of using GPS, one for the interstate and another for the primary roadway inventory, because the offset requirements were different. To ensure comparable results, data collection methods need to be standard across residencies.

We Suggest...

- ⇒ Standardize all modes and methods of spatial and attribute data collection to develop a residency-level GIS.
- ⇒ Consider adopting the same approach to determining a collection method for each maintainable asset that we used in this study. Each type of asset might require a different method.
- ⇒ Use the time estimates we generated to gage the time and costs associated with developing these applications statewide.
- ⇒ Identify and develop other priority applications to be used by the residency to reduce the per application development cost and allow the full potential of the GIS to be realized.

Reprinted with permission from Virginia Transportation Research Council Research Brief VTRC 99-R5RB, Investigation & Development of a Residency-Level GIS to Support Priority Applications, January 1999. •

UAF's Geophysical Institute to Manage T2 Library

DOT&PF's Research and Technology Transfer section and UAF's Geophysical Institute are excited and pleased to announce that the Geophysical Institute's Keith B. Mather Library is now under contract to manage the Technology Transfer Library. The entire publications holdings of the T2 Library moved from the Research and T2 office location at University Avenue to the University Campus, and are now housed in the Geophysical Institute's brand-new library facility. There is room to browse, desks at which to work and plug in laptop computers, small conference rooms are available, and designated parking will be available at the back of the building.

This move occurred in order to more efficiently serve you. The volume of publications and requests required a staff knowledgeable in more sophisticated

library cataloguing processes, and greater facility space than that available at the Research and T2 offices.

Publications request and return policies will remain the same; publications requests can still be made to the T2 office. They can also be made directly to the Mather Library: Geophysical Institute, UAF, 930 Koyukuk Drive, or PO Box 757355, Fairbanks, AK 99755-7355, phone: 907.474.7503; fax: (907) 474-7290, or by email at fygilib@aurora.alaska.edu.

Most software, and all audio cassette tapes, and video cassette tapes still reside at the T2 office on University Avenue.

Any questions or concerns should be sent to Billy Connor, Research Manager, at (907) 451-5479.

Publications for Loan

Place a check by the publication you would like to borrow.

- ☐ **Traffic Engineering Handbook**, Institute of Transportation Engineers, 4th Edition, 1992
- ☐ **Before-and-After Analysis of Advanced Transportation Management Systems**, Texas Transportation Institute, Texas DOT, Research Report 1467-3, 1997
- ☐ **National Transportation Product Evaluation Program**, American Association of State Highway and Transportation Officials, Report 98 NTPEP 137 2nd Edition, May 1998
- ☐ **Commodity Flow Feasibility Study**, Montana Department of Transportation, FHWA/MT-98-001/8143, March 1998
- ☐ **Desirables and Weeds for Roadside Management—A Northern Rocky Mountain Catalogue**, Montana State University, FHWA/MT-97/8115, Dec 1997
- ☐ **Statewide and Sub-area Transportation Model Feasibility Study**, Idaho Transportation Department, Final Report FHWA-ITD-RP130, Dec 1997
- ☐ **A Comparative Study of Performance of Different Designs for Flexible Pavements Volume I,II,II**, Department of Civil Engineering, North Carolina DOT, FHWA/NC/96-004, July 1996
- ☐ **The Next Decade**, FHWA, US DOT, FHWA-RD-98-109, 1998
- ☐ **Report to The AASHTO Board of Directors from The AASHTO Standing Committee on Research on the FY 1999 Program for the NCHRP**, National Cooperative Highway Research Program, May 1998
- ☐ **Briefs of Research Problem Statements**, National Cooperative Highway Research Program, May 1998
- ☐ **New York State DOT Performance Evaluation of WABO Two part Silicone Sealant**, Watson Bowman Acme, 1998
- ☐ **Long Term Pavement Performance Status Report**, FHWA, US DOT, FHWA-RD-98-136, Vol.1, No 5, July 1998
- ☐ **Frost-Shielding Methodology and Demonstration for Shallow Burial of Water and Sewer Utility Lines**, CRREL, CRREL Report 98-4, June 1998
- ☐ **Structural Analysis of DEW Line Station DYE-2**, Greenland 1983-1988, CRREL, CRREL Report 98-3, June 1998
- ☐ **Design Pamphlet for the Determination of Design Subgrade in Support of the 1993 AASHTO Guide for the Design of Pavement Structures**, FHWA, US DOT, FHWA-RD-97-083, Sept 1997

New Publications and Videos

Design Pamphlet for the Back Calculation of Pavement Layer Moduli in Support of the 1993 AASHTO Guide for the Design of Pavement Structures, FHWA, US DOT, FHWA-RD-97-076, Sept 1997

Back Calculation of Layer Moduli of LTPP General Pavement Study (GPS) Sites, US DOT, FHWA, FHWA-RD-97-086, Sept 1997

Development of Training Material for Highway Construction Personnel, Transportation Research Board, National Research Council, Number 228, July 1998

Information Systems for Road Management: Draft Guidelines on System Design and Data Issues, World Bank, Policy Planning and Research Staff, Infrastructure and Urban Development Department, Report INU 77, Sept 1990

Pavement Recycling Guidelines for State and Local Governments - Participant's Reference Book, FHWA, US DOT, FHWA-SA-98-042, Dec 1997

FHWA Study Tour for European Traffic Monitoring Programs and Technologies, FHWA, US DOT, FHWA-PL-97-032, August 1997

Site Characterization for Explosives Contamination at a Military Firing Range Impact Area, CRREL, Special Report 98-9, August 1998

Design and Implementation of Automatic Vehicle Identification Technologies for Traffic Monitoring in Houston, Texas - Phase 2 Final Report, Texas Transportation Institute, Research Report 1999-1F, May 1997

Guidelines for Evaluating Superheavy Load Routes, Texas Transportation Institute, Project Summary Report 3923-S, Oct 1997

Evaluation of Innovative Coordination Methods Utilizing ITS Technology for Traffic Signals, Texas Transportation Institute, Project Summary Report 2971-S, Oct 1997

Data and Information Required in Feasibility Studies for Private Toll Road Projects by States and Private Entities Involved in the Evaluation, Approval or Financing of Private Toll Road Projects, Texas Transportation Institute, Research Report 1756-1, Feb 1998

Procedures and Criteria Used to Evaluate the financial Viability of Private Entities Involved in the Approval, Financing and/or Evaluation of Private Toll Road Projects, Texas Transportation Institute, Research Report 1756-2, April 1998

Highway Planning and Operations for the Dallas District: Freeway System Plan Methodology, Texas Transportation Institute, Project Summary Report 1994-16S, Nov 1997

_____ **Highway Planning and Operations for the Dallas District**, Texas Transportation Institute, Project Summary Report 1994-12S

_____ **Highway Planning and Operations for the Dallas District**, Texas Transportation Institute, Project Summary Report 1994-14S

_____ **Notice of Proposed Amendments to the Manual on Uniform Traffic Control Devices Parts 2A, 2D, 2E, 2F, and 2I**, US DOT and FHWA -FHWA Docket No. 98-3644, FHWA-SA-98-067, 1998

_____ **Toll Facilities in the United States: Bridges-Roads-Tunnels-Ferries**, FHWA,US DOT, FHWA-PL-97-008, Feb 1997

_____ **Strategic Plan for Environmental Research** FHWA, FHWA, US DOT, FHWA-PD-98-016, 1998

_____ **Design Manual for Permanent Ground Anchor Walls**, US DOT & FHWA, FHWA-RD-97-130, Sept 1998

_____ **Summary Report of Research on Permanent Ground Anchor Walls, Volume I: Current Practice and Limiting Equilibrium Analyses**, US DOT & FHWA, FHWA-RD-98-065, Sept 1998

These materials may be borrowed for three weeks. However, if you need them longer, contact our office for an extension. Contact **Christel Kennedy** at (907) 451-5320 or TDD: (907) 451-2363.

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- ☐ FHWA-AK-RD-80-1 Pavement Structure Evaluation of Alaskan Highways (208 page, 1980) McHattie, Robert, Billy Connor, and David Esch *2 copies*
- ☐ FHWA-AK-RD-80-2 Rational Seasonal Load Restrictions and Overload Permits (54 pages, 1980) Connor, Billy *2 copies*
- ☐ FHWA-AK-RD-81-9 Frost Susceptibility Ratings and Pavement Structure Performance (42 pages, 1981) Esch, David, Robert McHattie, and Billy Connor *1 copy*
- ☐ AK-RD-81-10 Passive Solar Alaskan School, Report on Phase 1 (212 pages, 1981) State of Alaska Department of Transportation & Public Facilities, and U.S. Department of Energy *1 copy*
- ☐ AK-RD-81-11 A Passive Solar Fire Station, An Interim Report (21 pages, 1981) Seifert, Richard D. *1 copy*
- ☐ AK-RD-81-13 Tracer Gas for Meteorological Analysis in the Fairbanks Basin (33 pages, 1981) Rezek, John F., and Rick Jurick *1 copy*
- ☐ AK-RD-81-16 Implementation of the Governor's Haul Road Policy, Interagency Communication Needs (37 pages, 1981) Jurick, Rick, and Jim Murray *1 copy*
- ☐ AK-RD-81-17 Use of Yukon River Bridge: Risk Analysis Criteria Development (1981) Peratrovich & Nottingham, Inc. *1 copy*
- ☐ AK-RD-81-18 Research Procedures Manual (1981) State of Alaska Department of Transportation & Public Facilities Div. of Planning & Programming Research Section *2 copies*
- ☐ AK-RD-81-19 A Thermal Performance Design Optimization Study for Small Alaskan Rural Schools (171 pages, 1981) Zarling, John, and James Strandberg *1 copy*
- ☐ AK-RD-81-21 Annual Report of Director, FY 81 (48 pages, 1981) Research Section Division of Planning & Programming, AKDOT&PF *1 copy*
- ☐ FHWA-AK-RD-82-2 Asphalt Concrete Properties and Performance in Alaska (208 pages, 1982) McHattie, Robert L. *2 copies*
- ☐ FHWA-AK-RD-82-2A Executive Summary: Asphalt Concrete Properties and Performance in Alaska (14 pages, 1982) McHattie, Robert L. *1 copy*
- ☐ FHWA-AK-RD-82-5 Halon Suppression System Demonstration for the Alaskan Bush (7 pages, 1981) Rezek, John F. *1 copy*

- ___ AK-RD-82-6 Prediction of Roadway Strength from Soil Properties (15 pages, 1982) Esch, David C., and Robert L. McHattie *5 copies*
- ___ FHWA-AK-RD 82-07 A Literature Search for Substitute Materials in Frost Protective Layers (53 pages, 1981) Phukan, Arvind *1 copy*
- ___ FHWA-AK-RD 82-8 Pavement Problems in Alaska Versus Asphalt Gradings, Final Report (53 pages, 1981) Henry, John W. *1 copy*
- ___ FHWA-AK-RD 82-9 Performance of Bituminous Surface Treatments in Alaska (88 pages, 1981) Connor, Billy G. *2 copies*
- ___ AK-RD-82-11 Maintenance Monitoring for Remote Public Facilities- A Feasibility Study (15 pages, 1981) Tiedemann, J.B., and R.W. Jurick *1 copy*
- ___ AK-RD-82-12 Impulse Radar Familiarization and Testing on Road Sites in Fairbanks Area (14 pages, 1981) Kawasaki, Koji, and T.E. Osterkamp *1 copy*
- ___ FHWA-AK-RD 82-13 Field Evaluation Site for Ground Ice Detection: Construction Details of an Artificial Ice Mass (27 pages, 1981) Gruol, V.J., K. Kawasaki, and T.E. Osterkamp *1 copy*
- ___ AK-RD-82-14 Compilation of Highway and Airport Maintenance Costs (141 pages, 1981) Connor, Billy, and Chuck Gentry *1 copy*
- ___ FHWA-AK-RD 82-15 Description & Evaluation of the Alaska Pavement Rating Procedure (69 pages, 1982) McHattie, Robert L. *1 copy*
- ___ AK-RD-82-16 Compilation of Highway and Airport Maintenance Costs (313 pages, 1982) Connor, Billy, Charles Gentry, Ronald E. Miller, and R. Dan Farr *2 copies*
- ___ AK-RD-82-18 Two Rivers Passive Solar Design Analysis (51 pages, 1981) Strandberg, J.S. *2 copies*
- ___ AK-RD-82-19 The Use of A Reinforced Earth Slab to Reduce Embankment Loads at Auke Bay, Alaska (21 pages, 1981) Elias, Victor, and Eric G. Johnson *1 copy*
- ___ FHWA-AK-RD 82-20 Gasohol as a Vehicle Fuel in Subarctic Climates (25 pages, 1982) Rezek, J. *2 copies*

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Commissioner Joe Perkins, as well as Juneau Mayor Dennis Egan, Alaska Governor Tony Knowles, and WASHTO President Sid Morrison. AASHTO Vice President Tom Warne announced that Joe Perkins will lead the AASHTO Standing Committee on Highways. Federal Highway Administration (FHWA) Deputy Administrator Gloria Jeff spoke during a session on safe transportation in the 21st century.

Day two included a look at Alaska's TRAAK Corridor Assessments and the GPS approaches into Juneau Airport developed by Alaska Airlines (see the Summer 1998 issue of Technology for Alaskan Transportation for more information). The use of design-build in Utah to reconstruct a 17-mile section of highway in Salt Lake City was a popular topic. The project should be completed ahead of schedule and on-budget. Information on this project is online at www.i-15.com. A session about the ONE Planning Process led into a session on day three about the

management strategy behind the ONE DOT program and collaboration between modal agencies.

Day three had a session on reducing "Road Rage," an increasing problem on the nation's highway system. Participants looked at the topic of public transportation systems during an afternoon session. During the two-part session, Sid Scott of Trauner Consulting Services spoke about reducing highway congestion by promoting public transportation. Sid Morrison focused on rapid transit the intercity rail service like that provided by Colorado DOT in the Denver area and Washington State DOT in the Cascades Corridor from Eugene, Oregon to Vancouver, British Columbia.

During the Closing Banquet, the Hewes Award was presented to Terry Bourland of Arizona DOT for his work on Arizona's first design-build project. WASHTO President Sid Morrison also turned his position over to newly elected Pete Rahn. •

Alaska Department of Transportation & Public Facilities



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T² Center Staff

Sharon McLeod-Everette, Manager 907/451-5323, sharon_mcleod-everette@dot.state.ak.us
Simon Howell, Training Specialist 907/451-5482, simon_howell@dot.state.ak.us
Christel Kennedy, Administrative Clerk 907/451-5320, christel_kennedy@dot.state.ak.us
Christina L. Janssen, Newsletter Editor 907/451-5321, christina_janssen@dot.state.ak.us

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